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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,965	10/01/2003	Wanshi Chen	4740-212	8121

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EXAMINER	
KARIKARI, KWASI	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,965	CHEN ET AL.	
	Examiner	Art Unit	
	Kwasi Karikari	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

Response to Arguments

2. Applicant's arguments filed 12/28/2007 have been fully considered but they are not persuasive.

In the remarks, the Applicant argues that Gilhousen fails to teach "forcing always-softer reverse link handoff conditions". However, the Examiner disagrees with such assertion. With regard to Applicant's specification, "forcing always-softer reverse link handoff conditions" is described as an assignment of "extra or additional reverse link" for the mobile station (see Specification; Par. 0020).

Gilhousen fails specifically to mention **forcing always-softer reverse link handoff conditions**. However, Gilhousen does mention softer handoff conditions where mobile unit simultaneously communicates and monitors the pilot signals in multiple sectors of the base station X (see col. 8, line 51- col. 9, line 21; i.e., the communicating and monitoring include **signal pilots from multiple sectors** of the base station, whereby the signal pilot from multiple sectors is being associated with the assignment of the "extra or additional reverse link as described in the specifically). It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen to achieving a system whereby signals from sectors of common base station

are combined to provide an improved system performance at the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56).

Furthermore, the above remarks are not based on the fact that Gilhousen fails to use the **exact or specific words "forcing always...."** as coined in the specification and the claims. The Examiner remarks are rather based on the fact that Gilhousen teaches the **functionality** of the Applicant's invention.

In view of the above, the rejections using Gilhousen are proper and maintained as set forth below. These rejections are made FINAL.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,3,4,7,10,12,13,17,18,19 and 22 are rejected under U.S.C. 103(a) as being unpatentable over Gilhousen et al., (U.S. 5,625,876), (hereinafter Gilhousen).

Regarding **claims 1 and 10,** Gilhousen discloses a method of improving reverse link communications at a Radio Base Station (RBS) providing a plurality of radio sectors (see col. 8, lines 35-42), the method comprising:

RBS for mobile stations served by the RBS based on assigning one or more additional reverse links from remaining sectors of the RBS if a reverse link is assigned

to a mobile station from a serving sector of the RBS (see col. 8, line 51- col. 9, line 21); and

combining reverse link signals from the assigned reverse links to obtain a combined reverse link signal for the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56); but fails specifically to discloses "forcing always-softer reverse link handoff conditions".

However, Gilhousen does mention softer handoff conditions where mobile unit simultaneously communicates and monitors the pilot signals in multiple sectors of the base station X (see col. 8, line 51- col. 9, line 21; i.e., the communicating and monitoring include signal pilots from multiple sectors of the base station).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claim 17,** Gilhousen discloses method of improving reverse link communications at a Radio Base Station (RBS) having a plurality of radio sectors (see col. 8, lines 35-42), the method comprising:

selecting a first sector of the RBS as a serving sector for a mobile station and assigning forward and reverse links to the mobile station at the serving sector (see col. 8, line 51- col. 9, line 21);

selectively handoff condition for the mobile station at the RBS by assigning one or more additional reverse links to the mobile station at one remaining sectors of the RBS (see col. 8, line 51- col. 9, line 21); and

combining the reverse link signals from the mobile station from the assigned reverse links to form a combined reverse link signal (see col. 8, lines 35-42 and col.10, lines 24-56); but fails specifically to discloses "forcing always-softer reverse link handoff conditions".

However, Gilhousen does mention softer handoff conditions where mobile unit simultaneously communicates and monitors the pilot signals in multiple sectors of the base station X (see col. 8, line 51- col. 9, line 21; i.e., the communicating and monitoring include signal pilots from multiple sectors of the base station).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claims 3 and 12,** as recited in claims 1 and 10, Gilhousen discloses that the method further comprising assigning the one or more additional reverse links irrespective of whether the corresponding sectors are suitable for forward link assignments to the mobile station (= base station establishes the availability of resources in sector beta which is candidate set; and sector alpha is the active set, see col. 8, line 51- col. 9, line 21).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claims 4 and 13 ,** as recited in claims 1 and 10, Gilhousen discloses that the method further comprising assigning the one or more additional reverse links irrespective of whether the corresponding sectors are included in a current active set of the mobile station.(= base station establishes the availability of resources in sector beta which is candidate set; and sector alpha is the active set, see col. 8, line 51- col. 9, line 21).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claims 7 and 22,** as recited in claims 1 and 17, Gilhousen discloses that the method further comprising causing the mobile station to reduce a reverse link transmit power to improved reception quality of the combined reverse link signal (= power adjustment command for the mobile unit is created by the controller from the estimate signal strengths of each element 316A-316N, see col. 5, lines 42-50; col. 7, lines 60-65 and Fig. 2).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claim 18,** as recited in claim 17, Gilhousen discloses that the method further comprising transmitting the combined reverse link signal over a backhaul link to a supporting Base Station Controller (BSC) (= combined signal from the base station may be send to the communication system controller (see col. 10, lines 49-56).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

Regarding **claim 19,** as recited in claim 17, Gilhousen discloses that the method further comprising making forward link assignments independently of assigning the one or more additional reverse links to the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56).

It would therefore have been obvious to one of the ordinary skill in the art to utilize the teaching of Gilhousen achieving a system whereby signals from sectors of common base station are combined to provide an improved system performance (see col. 8, lines 35-42 and col.10, lines 24-56).

4. **Claims 2,9,11,16 and 24 are rejected under U.S.C. 103(a) as being unpatentable over Gilhousen in view of Nakano et al., (6,011,787), (hereinafter Nakano).**

Regarding **claims 2 and 11,** as recited in claims 1 and 10, Gilhousen discloses the method, wherein combining reverse link signals from the assigned reverse links to obtain a combined reverse link signal for the mobile station (see col. 8, lines 35-42 and col.10, lines 24-56); but fails to disclose that the combination process comprises "performing maximum ratio combining of the reverse link signals".

However, Nakano teaches the "performing maximum ratio combining of the reverse link signals" (see col. 8, lines 41-50).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Nakano with the system of Gilhousen for the benefit of achieving a system whereby maximal ratio combining among sectors is use to achieve higher compositional gain (see col. 2, lines 1-12 and lines 57-62).

Regarding **claims 9, 16 and 24,** as recited in claims 1,10 and 17, Gilhousen but fails to disclose increasing a finger search window used by RAKE receiver radio circuits at the RBS

However, Nakano teaches that RAKE receiver 59 carries out maximal radio combining of outputs (see col. 7, line 26- col. 8, line 50).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Nakano with the system of Gilhousen for the benefit of achieving a system whereby maximal ratio combining among sectors is use to achieve higher compositional gain (see col. 2, lines 1-12 and lines 57-62).

5. **Claims 5,6,8,14,15,20,21 and 23 are rejected under U.S.C. 103(a) as being unpatentable over Gilhousen in view of Tiedemann JR. et al., (20020154610 A1), (hereinafter Tiedemann).**

Regarding **claims 5 and 14**, as recited in claims 1 and 10, Gilhousen fails to teach that the method comprises: determining whether any reverse link supplemental channel (R-SCH) is assigned to the mobile station; a R-SCH is assigned to the mobile station.

However, Tiedemann discloses that mobile station request for reverse supplementary channel (R-SCH) from the base station when the mobile station has packet data to be sent, and the reverse supplemental channel (R-SCH) for transmission is possible after the request has been granted to the mobile station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of using R-SCH to transmit packet data to the base station during a communication.

Regarding **claims 6 and 15**, as recited in claims 5 and 14, Gilhousen fails to teach reverse link "fundamental channel (R-FCH) assigned to the mobile station.

However, Tiedemann discloses that the mobile station could use reverse fundamental channel (R-FCH) to request reverse supplemental (R-SCH) from the base station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of using R-SCH to transmit packet data to the base station during a communication.

Regarding **claim 8**, as recited in claim 7, Gilhousen fails to teach that the method comprises causing the mobile station to reduce a transmit gain of a reverse link supplemental channel signal transmitted by the mobile station to the RBS on the assigned reverse links.

However, Tiedemann discloses various ways to control the reverse supplementary channel transmit power (see Page 9, lines 0097-0099).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of controlling the R-SCH transmit power without terminating communication session between base station and the mobile station.

Regarding **claim 20**, as recited in claim 17, Gilhousen fails to teach that the method comprises; reverse link supplemental channels (R-SCHs) are being used for the mobile station.

However, Tiedemann teaches that mobile station requests for reverse supplementary channel (R-SCH) from the base station when the mobile station has packet data has to be sent, and the reverse supplemental channel (R-SCH) for transmission is possible after the request has been granted to the mobile station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of using R-SCH to transmit packet data to the base station during a communication.

Regarding **claim 21**, as recited in claim 20, Gilhousen fails to teach reverse link fundamental channel (R-FCH) associated with the mobile station.

Tiedemann discloses that the mobile station could use reverse fundamental channel (R-FCH) to request reverse supplemental (R-SCH) from the base station (see Page 6, line 0068).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen for the benefit of achieving a system that is capable of using the reverse fundamental channel (R-FCH) to send information to the base station.

Regarding **claim 23**, as recited in claim 22, Gilhousen fails to teach that the method comprises causing the mobile station to reduce a transmit gain of a reverse link supplemental channel signal transmitted by the mobile station to the RBS on the assigned reverse links.

However, Tiedemann discloses various ways to control the reverse supplementary channel transmit power (see Page 9, lines 0097-0099).

It would therefore have been obvious to one of the ordinary skill in the art to combine the teaching of Tiedemann with Gilhousen's for the benefit of achieving a system that is capable of reducing R-SCH transmit power without terminating communication session between base station and the mobile.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Newson et al., (6,320,898) teaches a CDMA pseudo-smart antenna selection.

Padovani (U.S 6,411,799) teaches a method and apparatus for providing ternary power control in communication system.

Damnjanovic et al., (U.S 2003050084 A1) teaches a reverse link power control in 1XEV-DV systems.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwasi Karikari whose telephone number is 571-272-8566. The examiner can normally be reached on M-F (8 am - 4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8566.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kwasi Karikari
Patent Examiner.
02/27/2007

JEAN GELIN
PRIMARY EXAMINER